PATENT SPECIFICATION (11) 1 230 448

DRAWINGS ATTACHED

1 230 448

(21) Application No. 57957/68 (22) Filed 6 Dec. 1968
(23) Complete Specification filed 17 Oct. 1969
(45) Complete Specification published 5 May 1971
(51) International Classification E 03 f 5/06
(52) Index at acceptance
E1G 94D 94J 94L

(72) Inventor JACK GOODRIDGE

(54) IMROVEMENTS IN OR RELATING TO DRAIN COVERS

(71) We, BRICKHOUSE FOUNDRY LIMITED, a British Company of Brickhouse Lane, West Bromwich, in the County of Stafford, do hereby declare the invention for which we pray that a Patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement.

This invention relates to drain covers of the type comprising an apertured drain part or grating, hereinafter referred to as "an apertured drain part," which is supported by a main frame adapted to be embedded in a road surface.

Drain covers of this type are installed in roads with the drain part level with the road surface. When the road is repaired by the addition of a further layer of surfacing material the level of the road surface is raised and thus a depression is formed by the drain cover if the drain part remains at its original height. This depression has hitherto been eliminated by removing the drain cover from the road surface and re-installing it with the main frame at a new, raised height, however this is relatively difficult and time consuming operation and is often not performed so that the road surface is allowed to remain uneven.

It is therefore the object of the present invention to provide a new or improved drain cover of the type described whereby the above mentioned problem may be easily and economically overcome.

The invention is a drain cover including a main frame adapted to be embedded in a road surface and having an aperture therein, an apertured inner frame member telescopically engaged within said aperture in the main frame for up and down movement relative to the main frame, an apertured drain part mounted within said aperture within said inner frame and pivotally connected to said inner frame for movement between an open position and a closed position and means provided on said inner frame to support and maintain said drain part in the closed position of the drain part, the arrangement being such that the inner frame, and hence the drain part carried thereby may be maintained in a desired telescoped position relative to said main frame by the insertion of packing pieces on the main frame beneath the inner frame.

From another aspect the invention is a drain cover including a main frame adapted to be embedded in a road surface and having an aperture therein, an apertured inner frame member telescopically engaged within said aperture in the main frame for up and down movement relative to the main frame, an apertured drain part mounted within said aperture within said inner frame and pivotally connected to said inner frame for movement between an open position and a closed position and means provided on said inner frame to support and maintain said drain part in the closed position of the drain part and shims provided on the main frame beneath the inner frame and engaged by the inner frame to maintain the inner frame and the drain part carried thereby in a desired telescopic position relative to the main frame.

A drain cover constructed in accordance with the invention will now be described in more detail by way of example with reference to the accompanying drawing which is an exploded perspective view of a drain cover according to the invention.

In this example the drain cover is square in plan view and comprises a main frame 11 having a generally square base 12 and four upstanding walls 13 which define a central rectangular aperture 14.

The base plate 12 extends within the walls 13 on opposed sides of the aperture 14. The main frame is normally made as a one-piece casting in cast iron.

In each corner between two adjacent

[Price 25p]

side walls 13 the upper surface of the plate 12 is provided with a generally rectangular recess 15, only one of which is shown in the drawing, for a purpose hereinafter to be described.

An inner frame 16 of square tubular shape is arranged so as to be telescopically engageable within the aperture 14 provided by the side walls 13 of the main frame. The dimensions of the inner frame 16 are arranged so that it is a good sliding fit within the aperture 14.

Recesses 17 are formed in the inwardly directed face of three of the side walls 13 of the main frame 11 and wedge members 18 having serrated outer faces 19 are engaged in the recesses 17 when the inner frame is in its desired position to prevent any lateral movement of the inner frame 16 relative to the main frame 11.

The inner frame 16 is provided with an inwardly directed flange 20 along one side and three separate inwardly directed flange portions 21 along the opposite side. The end portions of the continuous flange 20 and the end flange portions 21 are positioned so as to overlie the recesses 15 on the main frame 11.

The inner frame 16 is provided with curved slots 22 which receive pivot pins 23 provided on the drain part 24 which is of conventional constructioon provided with a plurality of apertures 25. Thus drain part 24 is pivotally connected to the inner frame 16 and is supported in its closed position by the pivot pins 23 and the inwardly directed flange 20 which engages an under part 26 of the drain part 24. In addition a second underpart 27 of the drain part 24 engages upwardly facing surfaces on the flange parts 21 of the inner frame 16 there being sufficient play between the pivot pins 23 and 22 to permit this engagement.

In use, when the drain cover is first installed in a road surface the inner frame 16 is engaged within the aperture 14 and the lower surface of the inner frame 16 engages the base plate 12, within the aperture 14.

When it is desired to raise the level of the drain part the inner frame 16 is removed from the aperture 14. The wedges 18 permit this operation to be performed because the serrated faces 19 engage only the main frame 11 and so permit the inner frame 16 to slide upwardly. A packing piece 26*a*, 26*b*, 26*c*, or 26*d* of the desired height is then placed in position on the base plate 12 in the aperture 14 at the corners of adjacent side walls 13, a reduced cross-section part 27 of each packing piece being engaged within the recess 15 to retain the packing pieces in position and prevent lateral movement thereof. It will be appreciated that all the packing pieces are of the same height but in the figure four packing pieces each of different height are shown merely to illustrate the different shapes of the packing pieces which may be used to achieve the desired height.

If after insertion of the four packing pieces of height 26*a* it is desired to again raise the height of the drain part 24 the inner drain part 16 and drain part 24 carried thereby are again removed from the main frame 11 and the four packing pieces 26*a* are removed and a further set of packing pieces for example packing pieces 26*b* are inserted in their place and then the inner frame 16 and drain part 24 are replaced in position. It will be appreciated that the drain part 24 may be pivoted upwardly into an open position for cleaning of the drain if desired as the inner frame 16 always remains level with the road surface and so the surfacing material of the road does not come into contact with the drain part 24 even though it may cover the upper end of the walls 13 of the main frame 11. It is found, in practice, that there is no difficulty in telescoping the inner frame relative to the main frame even if some road material does get into contact with its outer wall.

It will be seen therefore that the present invention will provide a very convenient arrangement whereby the drain part 24 of a drain cover may be easily and conveniently maintained level with the road surface without the need for extracting the main frame 11 from the road surface and relaying the main frame 11.

WHAT WE CLAIM IS: —

1. A drain cover including a main frame adapted to be embedded in a road surface and having an aperture therein, an apertured inner frame member telescopically engaged within said aperture in the main frame for up and down movement relative to the main frame, an apertured drain part mounted within said aperture within said inner frame and pivotally connected to said inner frame for movement between an open position and closed position and means provided in said inner frame to support and maintain said drain part in the closed position of the drain part, the arrangement being such that the inner frame, and hence the drain part carried thereby may be maintained in a desired telescoped position relative to said main frame by the insertion of packing pieces on the main frame beneath the inner frame.

2. A drain cover including a main frame adapted to be embedded in a road surface and having an aperture therein, an apertured inner frame member telescopically engaged within said aperture in the main frame for up and down movement relative

to the main frame, an apertured drain part mounted within said aperture within said inner frame and pivotally connected to said inner frame for movement between an open position and a closed position and means provided on said inner frame to support and maintain said drain part in the closed position of the drain part and shims provided on the main frame beneath the inner frame and engaged by the inner frame to maintain the inner frame and the drain part carried thereby in a desired telescoped position relative to the main frame.

3. A drain cover according to Claim 1 or Claim 2 wherein a range of shims of different height is provided to enable the telescoped position of the inner frame and drain part relative to the main frame to be adjusted as desired by providing shims of suitable height on the main frame.

4. A drain cover according to any preceding claim wherein the drain part is level with the top of said inner frame.

5. A drain cover according to any preceding claim wherein the drain part is carried directly by said inner frame.

6. A drain cover according to any preceding claim wherein recesses are provided in said main frame within which recesses said shims engage.

7. A drain cover according to any preceding claim wherein the main frame comprises a base plate and an upwardly extending wall portion which defines said aperture.

8. A drain cover according to any preceding claim wherein said aperture in the main frame is rectangular.

9. A drain cover substantially as hereinbefore described with reference to and as shown in the accompanying drawing.

FORRESTER, KETTLEY & CO.,
Chartered Patent Agents,

Rutland House,
Edmund Street,
Birmingham 3,
and,
Jessel Chambers,
88-90 Chancery Lane,
London W.C.2.

Printed for Her Majesty's Stationery Office by The Tweeddale Press Ltd., Berwick-upon-Tweed, 1971
Published at the Patent Office, 25 Southampton Buildings, London WC2A 1AY from which copies may be obtained.

1,230,448 COMPLETE SPECIFICATION
1 SHEET

This drawing is a reproduction of the Original on a reduced scale.